

In re Application of: Tamar HAREL et al
Serial No.: 10/804,560
Filed: March 18, 2004
Office Action Mailing Date: December 8, 2008

Examiner: Michael William Kahelin
Group Art Unit: 3762
Attorney Docket: 34487

In the Claims:

1 – 51. (Cancelled)

52. (Currently amended) Apparatus for blood glucose control, comprising:

at least one implantable electrode configured to be mounted attached to muscle tissue in the abdominal cavity; and

circuitry, which electrifies said at least one electrode in a manner suitable for blood glucose level control~~for a short duration every period of time, such that the resulting application frequency is between 1 and 15 times per second.~~

53. (Currently amended) Apparatus according to claim 52, wherein said circuitry is a closed loop system including sensing of the effect of the electrification and wherein said circuitry is configured to ~~over-stimulate~~ more than necessary for achieving a desired effect of electrification, when the sensed effect does not indicate with certainty that the electrification was sufficient or insufficient~~in cases of doubt.~~

54. (Currently amended) Apparatus according to claim 52, wherein said circuitry is a semi-open loop system where a ~~relatively-long~~ stimulation series, sufficient to reduce blood glucose levels from a clinically elevated level to a normal level, is applied without feedback.

55. (Original) Apparatus according to claim 52, wherein said circuitry is an open loop system where a stimulation series is applied responsive to a trigger and without feedback.

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56 – 78. (Cancelled)

79. (Previously presented) Apparatus according to claim 52, wherein said circuitry is configured to electrify said electrode in a manner which generates an electric field that reduces glucose levels in a non-insulin manner.

80. (Previously presented) Apparatus according to claim 52, wherein said circuitry is configured to electrify said electrode in a manner which generates an electric field that reduces glucagon secretion.

81. (Previously presented) Apparatus according to claim 52, wherein said circuitry configured to electrify said electrode in a manner which generates an electric field that reduces or prevents a substantial increase in insulin secretion.

82. (Currently amended) Apparatus according to claim 52, wherein said apparatus is programmed with information pertaining to a knowledge of a slow acting chemical-based insulin therapy provided to a pancreas.

83. (Previously Presented) Apparatus according to claim 52, comprising an automatic glucose sensor for automatically detecting a situation requiring an acute response.

84. (Previously Presented) Apparatus according to claim 52, comprising an automatic glucose sensor for automatically detecting a situation requiring an acute insulin response.

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85. (Currently amended) Apparatus according to claim 52, wherein said ~~field~~ electrification acts as an acute insulin response in reducing glucose levels.

86. (Cancelled)

87. (Previously Presented) Apparatus according to claim 52, wherein said electrode is adapted for attachment to a muscular organ.

88 – 100. (Cancelled)

101. (Previously presented) An apparatus according to claim 52, wherein said field reduces elevated blood glucose levels by at least 20% of an elevation of the glucose level above a fasting baseline glucose level.

102. (Previously presented) Apparatus according to claim 52, wherein said circuitry configured to electrify said electrode in a manner which generates an electric field that reduces blood insulin levels, as measured by an accumulated amount for a glucose ingestion event and in comparison to a regular response of said person, by more than 20%.

103. (Currently amended) Apparatus according to claim ~~52~~108, wherein said circuitry electrifies said at least one electrode for a given period of time 5 times per second.

104. (Currently amended) Apparatus according to claim ~~52~~108, wherein ~~said an application applied at said application frequency~~given period is shorter than 30ms.

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105. (Currently amended) Apparatus according to claim 52, wherein said ~~electric field~~electrification is non-excitatory in that it does not substantially induce new bursts of islet activity in a pancreas.

106. (Currently amended) Apparatus according to claim 52, ~~comprising an~~wherein said at least one electrode comprises an implantable electrode adapted for attachment to a stomach.

107. (Currently amended) Apparatus according to claim 52, wherein said circuitry electrifies said at least one electrode in synchrony with the propagation of action potentials in the stomach due to electrical activity of the stomach.

108. (Currently amended) Apparatus according to claim 52, wherein said circuitry ~~provides~~electrifies said at least one electrode with an electric field that significantly reduces high blood glucose levels, and does not substantially reduce normal blood glucose levels.

109. (New) Apparatus according to claim 52, wherein said at least one electrode is electrified to have an application frequency of an electric field between 1 and 15 times per second.

110. (New) Apparatus according to claim 52, wherein said at least one electrode is configured for attachment to the GI tract.

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111. (New) Apparatus according to claim 52, wherein said electrodes are configured for attachment to the duodenum.

112. (New) Apparatus according to claim 81, wherein said electrification reduces blood glucose levels.